

**EXHIBIT D-7: DISCHARGE LIMITATIONS,  
MONITORING REQUIREMENTS, AND ALERT LEVELS  
(REVISED MARCH 19, 2021)**

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## Appendix 1 – Monitoring Tables

## **1.1 Introduction**

Florence Copper Inc. (Florence Copper) has prepared this document to provide information regarding proposed discharge limitations, monitoring requirements, alert levels (AL), compliance schedules, and temporary cessation or related plans. Accordingly, this document includes information that describes discharge limitations, monitoring requirements, ALs, compliance schedules, and temporary cessation plans proposed by Florence Copper.

## **1.2 Discharge Limitations**

Florence Copper proposes the following discharge limitations:

1. The permittee shall operate and maintain all permitted facilities to prevent unauthorized discharges pursuant to Arizona Revised Statutes § 49-201(12) resulting from failure or bypassing of Best Available Demonstrated Control Technology pollutant control technologies including liner failure, uncontrollable leakage, berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges. Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre of the impoundment.
2. Injection of lixiviant will not be conducted until all core holes and wells within 500 feet of an injection or recovery well located in the In-Situ Copper Recovery wellfield have been abandoned in accordance with the Plugging and Abandonment Plan included as Attachment E of the Underground Injection Control (UIC) Permit application.
3. Florence Copper will initiate contingency actions identified in Aquifer Protection Permit (APP) No. P-101704 if process solution sampling data show that the polynuclear aromatic hydrocarbon concentration in the lixiviant exceeds 20 milligrams per liter (mg/L) in any monthly sample, or 10 mg/L as a quarterly average.

## **1.3 Monitoring Activities**

This section describes monitoring activities that are designed to provide an early detection and prompt response to any condition that might result in an unauthorized discharge to an aquifer or to the vadose zone, or that might cause a violation of an Aquifer Water Quality Standard (AWQS) at a Point of Compliance (POC) well, or cause concentrations of discharge constituents to increase at a POC well if the pre-operational concentrations of those constituents exceed AWQS. The activities include groundwater and facility/operational monitoring.

### **1.3.1 Monitoring and Analytical Requirements**

All monitoring required under the APP and UIC permits will continue for the duration of the permits except as conducted in accordance with a temporary cessation plan approved by the U.S. Environmental Protection Agency (USEPA) and the Arizona Department of Environmental Quality (ADEQ). All sampling, preservation, and holding times will be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks, and duplicate samples will also be obtained and chain-of-custody procedures will be followed, in accordance with currently accepted standards of professional practice. Florence Copper will consult with the USEPA Code of Federal Regulations for guidance in this regard. Copies of laboratory analyses and chain-of-custody forms will be maintained at the permitted facility. Upon request, these documents will be made immediately available for review by the USEPA and ADEQ personnel.

All samples collected for compliance monitoring at the POC wells will be analyzed using Arizona and USEPA approved methods. Regardless of the method used, the detection limits will be sufficient to determine compliance with the regulatory limits of the parameters specified in the UIC Permit. Analyses will be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work will meet quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services  
Office of Laboratory Licensure and Certification  
150 North 18 Avenue  
Phoenix, AZ 85007  
Phone: (602) 542-1025

Monitoring equipment required by the APP and UIC permits will be installed and maintained so that representative samples required by the permits can be collected. If new groundwater wells are determined to be necessary, the construction details will be submitted to the USEPA and ADEQ for approval prior to installation, and the APP and the UIC Permit shall be amended to include any new monitoring points.

### ***1.3.2 Groundwater Monitoring Sampling Protocols***

The following describes the protocols that will be used for the collection and analysis of groundwater samples collected from the designated POC wells listed in Tables 13 and 14 of APP No. P-101704, fault monitoring wells, Underground Source of Drinking Water (USDW) monitoring wells, and annular conductivity device (ACD) demonstration wells listed on Tables 13.1 and 14.1 provided with this Exhibit. Tables 13, 13.1, 14, and 14.1 are included in Appendix 1 of this Exhibit.

The protocols will be used for collecting and analyzing samples from POC wells for which ALs and Aquifer Quality Limits (AQL) have been established, and for collecting and analyzing groundwater samples for the purpose of developing groundwater quality data needed for the establishment of ALs and AQLs. ALs and/or AQLs have been previously established for all of the POC wells listed in Tables 13 and 14, except replacement wells M32-UBF and M33-UBF. ALs and AQLs have not yet been established for the fault monitoring wells, USDW monitoring wells, and ACD demonstration wells listed in Tables 13.1 and 14.1.

Static water levels will be measured and recorded prior to sampling. Wells will be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, and conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well will be allowed to recover to 80 percent of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well will be recorded as “dry” for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures will be reported and submitted with the quarterly report.

Florence Copper may conduct the sampling using the low-flow purging method as described in the Arizona Department of Water Resources Research Center, March 1995 Field Manual for Water Quality Sampling. If the low-flow sampling method is used, the well will be purged until indicator parameters

stabilize. Indicator parameters will include dissolved oxygen, turbidity, pH, temperature, and conductivity.

### **1.3.3 Existing ALs and AQLs**

Tables 13, 13.1, 14, and 14.1 (Appendix 1) list parameters that are to be monitored quarterly and annually at each POC well during the period of the permit. ALs and/or AQLs have been previously established for all of the POC wells listed in Tables 13 and 14, except replacement wells M32-UBF and M33-UBF. Florence Copper will use the procedure set forth in APP No. P-101704 to calculate the ALs and/or AQLs for POC wells M32-UBF, M33-UBF, fault monitoring wells, USDW monitoring wells, and ACD demonstration wells listed in Tables 13.1 and 14.1. The locations of each of the POC wells, fault monitoring wells, USDW monitoring wells, and ACD demonstration wells are provided in Table D-7.1.

### **1.3.4 New ALs and AQLs**

New ALs and AQLs will be established and calculated using the method set forth in APP No. P-101704. The procedure is provided below.

#### **1.3.4.1 New ALs**

ALs shall be calculated for all contaminants with an established numeric AWQS for any new or replacement POC wells, fault monitoring wells, USDW monitoring wells, and ACD demonstration wells unless otherwise specified in the APP or UIC Permit.

The permittee shall submit the ambient groundwater data in tabulated form to the ADEQ and USEPA for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in collection and analyses of the samples for all parameters listed in Tables 13, 13.1, 14, and 14.1 to be established for each POC well, fault monitoring wells, USDW monitoring wells, and ACD demonstration wells shall be submitted to the ADEQ and USEPA. The permittee may submit a report with the calculations for each AL and AQL included in the permit for review and approval by the ADEQ and USEPA, or the permittee may defer calculation of the ALs and AQLs by the ADEQ. The ALs shall be established and calculated following acceptable statistical guidance such as the *USEPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance* (EPA 530-R-09-007).

The following criteria shall be met in establishing ALs in the permit:

1. The AL shall be calculated for a parameter using the analyses from a minimum of eight sampling events.
2. Any data where the laboratory Practical Quantitation Limit (PQL) exceeds 80 percent of the AWQS shall not be included in the AL calculation.
3. If a parameter is below the detection limit, the permittee must report the value as “less than” the numeric value for the PQL or detection limit for the parameter, not just as “non-detect.” For those parameters, the permittee shall use a value of one-half the reported detection limit for the AL calculation.
4. If the analytical results from more than 50 percent of the samples for a specific parameter are non-detect, then the AL shall be set at 80 percent of the AWQS.

5. If the calculated AL for a specific constituent and well is less than 80 percent of the AWQS, the AL shall be set at 80 percent of the AWQS for that constituent in that well.

#### **1.3.4.2 New AQLs**

For each of the monitored analytes for which a numeric AWQS has been adopted, the AQL shall be established as follows:

1. If the calculated AL is less than the AWQS, then the AQL shall be set equal to the AWQS.
2. If the calculated AL is greater than the AWQS, then the AQL shall be set equal to the calculated AL value, and no AL shall be set for that constituent at that monitoring point.

#### **1.3.5 Replacement Monitoring Wells**

In the event that one or more of the designated POC wells, fault monitoring wells, USDW monitoring wells, and ACD demonstration wells should become unusable or inaccessible due to damage or any other event, a replacement well will be constructed and installed upon approval by the USEPA and ADEQ. If the replacement well is 50 feet or less from the original well, the ALs and/or AQLs calculated for the designated POC well will apply to the replacement well.

#### **1.3.6 Compliance Monitoring**

Florence Copper will begin compliance monitoring at the designated POC wells once applicable ALs and/or AQLs have been established. Florence Copper will continue to monitor each well listed in Tables 13, 13.1, 14, and 14.1 in accordance with the parameters and frequencies listed in those Tables. If monitoring indicates that an AL or AQL have been exceeded, Florence Copper will follow the requirements outlined in Section 2.6.2.5 of APP No. P-101704, and applicable sections of the UIC Permit. The results of compliance monitoring will be documented and submitted with the quarterly report to the USEPA and ADEQ.

#### **1.3.7 Facility/Operational Monitoring**

##### **1.3.7.1 Facility Monitoring**

Exhibit D-2 of Attachment D (Operations Plan) of the UIC Application lists facility components that will be monitored to maintain normal operations. Many of the components listed will be equipped with electronic monitors and automatic shutoffs. Conditions requiring initiation of the contingency plan are described in Exhibit D-2 of Attachment D of this Application.

#### **1.4 Temporary Cessation**

Florence Copper will give written notice to the USEPA and ADEQ before ceasing operation of the facility for a period of 60 days or greater. At the time of notification, Florence Copper will submit for USEPA and ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following USEPA and ADEQ approval, Florence Copper will implement the approved plan. If necessary, the USEPA and ADEQ will amend the APP and UIC permits conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, Florence Copper will provide written notice to the USEPA and ADEQ of the operational status of the facility every 2 years. If Florence Copper intends to permanently cease operation of any facility, Florence Copper will submit written notification of closure to the USEPA and ADEQ in accordance with permit conditions.

**APPENDIX 1**  
**Monitoring Tables**

**TABLE D-7.1**  
**WELL LOCATIONS**  
 FLORENCE COPPER INC.  
 FLORENCE, ARIZONA

Well Name	Well Type	Latitude	Longitude
M66-UBF	USDW Monitoring Well	33.04543959	-111.4358553
M67-LBF	USDW Monitoring Well	33.04563265	-111.4359356
M68-LBF	USDW Monitoring Well	33.04853376	-111.4363396
M69-UBF	USDW Monitoring Well	33.04866895	-111.436342
M70-LBF	USDW Monitoring Well	33.05266331	-111.4366228
M71-UBF	USDW Monitoring Well	33.05281577	-111.4366078
M72-UBF	ACD Demonstration Well	33.05086431	-111.4347419
M73-LBF	ACD Demonstration Well	33.05086351	-111.4345365
M62-LBF	Fault Monitoring Well	33.05434192	-111.433434
M63-LBF	Fault Monitoring Well	33.05390093	-111.4273522
M64-LBF	Fault Monitoring Well	33.04915383	-111.4246236
M65-LBF	Fault Monitoring Well	33.04398948	-111.4310261
M75-UBF	Fault Monitoring Well	33.04926807	-111.4247445
M74-O	Fault Monitoring Well	33.04903477	-111.4244877
M77-UBF	Fault Monitoring Well	33.04421236	-111.4310539
M76-O	Fault Monitoring Well	33.04383021	-111.431056
M52-UBF	Point of Compliance Well	33.05292796	-111.4235828
M7-GL	Point of Compliance Well	33.0541719	-111.4367234
M8-O	Point of Compliance Well	33.05415471	-111.4369024
M3-GL	Point of Compliance Well	33.04350051	-111.42248
M4-O	Point of Compliance Well	33.04354048	-111.4225521
M1-GL	Point of Compliance Well	33.04392337	-111.432538
M18-GU	Point of Compliance Well	33.0439299	-111.4327246
M15-GU	Point of Compliance Well	33.05111382	-111.4379257
M2-GU	Point of Compliance Well	33.04363807	-111.4223873
M6-GU	Point of Compliance Well	33.05424399	-111.4367902
O19-GL	Point of Compliance Well	33.05367077	-111.4336038
P19-1-O	Point of Compliance Well	33.05359733	-111.4331701
M14-GL	Point of Compliance Well	33.05111101	-111.4377726
P49-O	Point of Compliance Well	33.04507134	-111.4355847
M21-UBF	Point of Compliance Well	33.05351268	-111.4312728
M23-UBF	Point of Compliance Well	33.05130893	-111.4377835
M25-UBF	Point of Compliance Well	33.04839948	-111.4375655
M30-O	Point of Compliance Well	33.05357994	-111.428885
M27-LBF	Point of Compliance Well	33.05447667	-111.4352545
M19-LBF	Point of Compliance Well	33.05360667	-111.4312012
M29-UBF	Point of Compliance Well	33.05459845	-111.4350118
M22-O	Point of Compliance Well	33.051273	-111.4376374
M24-O	Point of Compliance Well	33.04829271	-111.4375855
M26-O	Point of Compliance Well	33.05445396	-111.4350427
M28-LBF	Point of Compliance Well	33.0546082	-111.4351729
M31-LBF	Point of Compliance Well	33.05356137	-111.4290361
M17-GL	Point of Compliance Well	33.0471846	-111.4375671
M16-GU(R)	Point of Compliance Well	33.04730129	-111.4373254
O49-GL(R)	Point of Compliance Well	33.04505778	-111.4362073
M20-O	Point of Compliance Well	33.05361718	-111.4313524
M33-UBF	Point of Compliance Well	33.05202471	-111.4176937
M32-UBF	Point of Compliance Well	33.04839792	-111.4195207



TABLE 13  
QUARTERLY GROUNDWATER COMPLIANCE MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter	M1-GL		M2-GU		M3-GL		M4-O		M6-GU		M7-GL		M8-O		M14-GL		M15-GU	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Indicator Parameters <sup>1</sup> :																		
pH (field) (S.U.)	Monitor <sup>2</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Specific Conductance (field) (mhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature (field)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	5.1	Monitor	4.0	3.2	4.0	3.2	4.0	3.6	4.0	3.2	4.0	3.2
Magnesium	NE <sup>3</sup>	31	NE	39	NE	36	NE	15	NE	44	NE	1.0	NE	1	NE	23	NE	21
Sulfate	NE	184.2	NE	275	NE	187	NE	405	NE	86	NE	82	NE	122	NE	144	NE	89
Total dissolved solids	NE	1028	NE	1496	NE	1157	NE	1072	NE	620	NE	464	NE	609	NE	874	NE	794

**Notes:**

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no aquifer quality limit (AQL) or alert level (AL) will be established in the permit.

<sup>3</sup> NE = Not Established

<sup>4</sup> Reserved - AQL/Als pending ambient monitoring being performed per Section 2.5.3.2 and the CSI requirements.

mhos/cm = millimhos per centimeter

amsl = above mean sea level

bgs = below ground surface

mg/L = milligrams per liter

S.U. = standard unit

TABLE 13  
QUARTERLY GROUNDWATER COMPLIANCE MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter	M16-GU(R)		M17-GL		M18-GU		M19-LBF		M20-O (R)		M21-UBF		M22-0		M23-UBF		M24-0	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Indicator Parameters <sup>1</sup> :																		
pH (field) (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Specific Conductance (field) (mhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature (field)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Magnesium	NE	14	NE	9.3	NE	8.6	NE	21	NE	14	NE	87	NE	8.6	NE	69	NE	19
Sulfate	NE	112	NE	209	NE	86	NE	89	NE	112	NE	487	NE	86	NE	411	NE	1364
Total dissolved solids	NE	809	NE	831	NE	1094	NE	794	NE	809	NE	2867	NE	1094	NE	2392	NE	2363

**Notes:**

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<sup>3</sup> NE = Not Established

<sup>4</sup> Reserved - AQL/Als pending ambient monitoring being performed per Section 2.5.3.2 and the CSI requirements.

mhos/cm = millimhos per centimeter

amsl = above mean sea level

bgs = below ground surface

mg/L = milligrams per liter

S.U. = standard unit

TABLE 13  
QUARTERLY GROUNDWATER COMPLIANCE MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter	M25-UBF		M26-0		M27-LBF		M28-LBF		M29-UBF		M30-0		M31-UBF		O19-GL		O49-GL(R)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Indicator Parameters <sup>1</sup> :																		
pH (field) (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Specific Conductance (field) (mhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature (field)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.4	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Magnesium	NE	76	NE	1.0	NE	51	NE	2.6	NE	84	NE	18	NE	NE	NE	17	NE	18
Sulfate	NE	387	NE	105	NE	179	NE	81	NE	456	NE	102	NE	330	NE	99	NE	181
Total dissolved solids	NE	2683	NE	556	NE	1745	NE	610	NE	2751	NE	824	NE	NE	NE	770	NE	849

**Notes:**

<sup>1</sup> Metals must be analyzed as dissolved metals.

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<sup>3</sup> NE = Not Established

<sup>4</sup> Reserved - AQL/Als pending ambient monitoring being performed per Section 2.5.3.2 and the CSI requirements.

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TABLE 13  
QUARTERLY GROUNDWATER COMPLIANCE MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter	P19-1-0		P49-O		M52-UBF (M32-UBF replacement)		M54-LBF		M54-O		M33-UBF (replacement)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Indicator Parameters <sup>1</sup> :												
pH (field) (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Specific Conductance (field) (mhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature (field)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2	Reserved <sup>4</sup>	Reserved
Magnesium	NE	23	NE	6.2	NE	45	NE	46.0	NE	11	Reserved	Reserved
Sulfate	NE	144	NE	181	NE	351	NE	329	NE	200	Reserved	Reserved
Total dissolved solids	NE	874	NE	801	NE	1666	NE	1731	NE	855	Reserved	Reserved

**Notes:**

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no aquifer quality limit (AQL) or alert level (AL) will be established in the permit.

<sup>3</sup> NE = Not Established

<sup>4</sup> Reserved - AQL/Als pending ambient monitoring being performed per Section 2.5.3.2 and the CSI requirements.

mhos/cm = millimhos per centimeter

amsl = above mean sea level

bgs = below ground surface

mg/L = milligrams per liter

S.U. = standard unit

Table 13.1. Quarterly Groundwater Compliance Monitoring at Supplemental Monitoring Wells

Parameter	M66-UBF (USDW Monitoring Well)		M67-LBF (USDW Monitoring Well)		M68-LBF (USDW Monitoring Well)		M69-UBF (USDW Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	TBD <sup>1</sup>	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Water Level Elevation (ft amsl)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
<b>Indicator Parameters:</b>								
pH (field) (S.U.)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Specific Conductance (field) (mhos/cm)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Temperature (field)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Fluoride	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Magnesium	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Sulfate	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total dissolved solids	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Parameter	M70-LBF (USDW Monitoring Well)		M71-UBF (USDW Monitoring Well)		M72-UBF (ACD Demonstration Well)		M73-LBF (ACD Demonstration Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Water Level Elevation (ft amsl)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
<b>Indicator Parameters:</b>								
pH (field) (S.U.)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Specific Conductance (field) (mhos/cm)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Temperature (field)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Fluoride	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Magnesium	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Sulfate	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total dissolved solids	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Parameter	M62-LBF (Fault Monitoring Well)		M63-LBF (Fault Monitoring Well)		M64-LBF (Fault Monitoring Well)		M65-LBF (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Water Level Elevation (ft amsl)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
<b>Indicator Parameters:</b>								
pH (field) (S.U.)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Specific Conductance (field) (mhos/cm)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Temperature (field)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Fluoride	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Magnesium	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Sulfate	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total dissolved solids	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Parameter	M75-UBF (Fault Monitoring Well)		M74-O (Fault Monitoring Well)		M77-UBF (Fault Monitoring Well)		M76-O (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
Depth to Groundwater (ft. bgs)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Water Level Elevation (ft amsl)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
<b>Indicator Parameters:</b>								
pH (field) (S.U.)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Specific Conductance (field) (mhos/cm)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Temperature (field)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Fluoride	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Magnesium	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Sulfate	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total dissolved solids	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

ACD = annular conductivity device

AL = alert level

AQL = Aquifer Quality Limits

ft. amsl = feet above mean sea level

ft. bgs = feet below ground surface

mg/L = milligrams per liter

mhos/cm = microsiemens per centimeter

S.U. = standard unit

TBD = To Be Determined

USDW = Underground Source of Drinking Water

TABLE 14  
ANNUAL GROUNDWATER MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter <sup>1</sup>	M1-GL		M2-GU		M3-GL		M4-O		M6-GU		M7-GL		M8-O		M14-GL		M15-GU	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	Monitor <sup>2</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as nitrogen <sup>3</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cation/anion balance	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	Monitor	0.71	Monitor	0.71	Monitor	0.71	Monitor	0.71	Monitor	0.71	Monitor	0.71	NE	0.71	NE	0.71	NE	0.71
Antimony	0.006	0.005	0.016	Monitor	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.016	NE	0.016	NE
Arsenic	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Beryllium	0.004	0.0032	0.0053	Monitor	0.0053	Monitor	0.0053	NE	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Cadmium	0.005	Monitor	0.040	Monitor	0.005	Monitor	0.040	NE	0.005	0.004	0.040	NE	0.005	0.004	0.005	0.004	0.04	NE
Chromium (total)	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Cobalt	NE <sup>4</sup>	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005
Copper	NE	0.51	NE	0.51	NE	0.51	NE	0.51	NE	0.51	NE	0.51	NE	0.8	NE	0.8	NE	0.8
Iron	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.04	0.05	0.04	0.05	0.04
Manganese	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0011	0.002	0.0011	0.002	0.0011	0.002	0.0016	0.002	0.0016	0.002	0.0016
Nickel	0.13	NE	0.13	NE	0.13	NE	0.10	0.08	0.10	0.08	0.13	NE	0.1	0.08	0.13	NE	0.13	NE
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.027	0.05	0.027	0.05	0.027	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Zinc	NE	2.5	NE	2.5	NE	2.5	NE	2.5	NE	2.5	NE	2.5	NE	4	NE	4	NE	4
Gross Alpha	NE	15	NE	15	NE	1	NE	15	NE	15	NE	15	NE	15	NE	15	NE	1
Adjusted Gross Alpha (pCi/L) <sup>5</sup>	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12
Radium 226 + 228 (pCi/L)	5	4	5	4	5	4	5	Monitor	5	4	5	4	5	4	5	4	5	4
Total Uranium Isotopes (pCi/L) <sup>6</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total petroleum hydrocarbons- diesel	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Ethylbenzene	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56
Toluene	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8
Total Xylene	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8

Notes:

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no AQL or AL will be established in the permit.

<sup>3</sup> Nitrate will be used only for calculation of cation/anion balance because of regional nitrate pollution and none used in processes.

<sup>4</sup> NE = Not Established

<sup>5</sup> If the gross alpha particle activity is greater than the AL or AQL, then calculate the adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

<sup>6</sup> Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

TABLE 14  
ANNUAL GROUNDWATER MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter <sup>1</sup>	M16-GU(R)		M17-GL		M18-GU		M19-LBF		M20-O(R)		M21-UBF		M22-O		M23-UBF		M24-O	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as nitrogen <sup>3</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cation/anion balance	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71
Antimony	0.006	0.005	0.016	NE	0.016	NE	0.006	0.005	0.006	0.005	0.016	NE	0.016	NE	0.006	0.005	0.006	0.005
Arsenic	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Beryllium	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Cadmium	0.04	NE	0.005	0.004	0.04	NE	0.005	0.004	0.04	NE	0.04	NE	0.04	NE	0.04	NE	0.005	0.004
Chromium (total)	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Cobalt	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005
Copper	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8
Iron	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Manganese	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Nickel	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.002	0.0016	0.024	NE	0.002	0.0016	0.024	NE	0.024	NE	0.024	NE	0.024	NE	0.024	NE	0.002	0.0016
Zinc	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4
Gross Alpha	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15
Adjusted Gross Alpha (pCi/L) <sup>5</sup>	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12
Radium 226 + 228 (pCi/L)	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4
Total Uranium Isotopes (pCi/L) <sup>6</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total petroleum hydrocarbons- diesel	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Ethylbenzene	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56
Toluene	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8
Total Xylene	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8

Notes:

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no AQL or AL will be established in the permit.

<sup>3</sup> Nitrate will be used only for calculation of cation/anion balance because of regional nitrate pollution and none used in processes.

<sup>4</sup> NE = Not Established

<sup>5</sup> If the gross alpha particle activity is greater than the AL or AQL, then calculate the adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

<sup>6</sup> Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

TABLE 14  
ANNUAL GROUNDWATER MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter <sup>1</sup>	M25-UBF		M26-O		M27-LBF		M28-LBF		M29-UBF		M30-O		M31-LBF		O19-GL		O49-GL(R)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as nitrogen <sup>3</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cation/anion balance	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71	NE	0.71
Antimony	0.006	0.005	0.016	NE	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005
Arsenic	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Beryllium	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Cadmium	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Chromium (total)	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Cobalt	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005	NE	0.005
Copper	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8
Iron	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2	NE	2.2
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Manganese	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22	NE	0.22
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Nickel	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	0.13	NE	0.1	0.08
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.024	NE	0.002	0.0016	0.024	NE	0.024	NE	0.024	NE	0.024	NE	0.024	NE	0.024	NE	0.024	NE
Zinc	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4	NE	4
Gross Alpha	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15	NE	15
Adjusted Gross Alpha (pCi/L) <sup>5</sup>	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12	15	12
Radium 226 + 228 (pCi/L)	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4
Total Uranium Isotopes (pCi/L) <sup>6</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total petroleum hydrocarbons- diesel	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Ethylbenzene	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56
Toluene	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8
Total Xylene	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8	10	8

Notes:

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no AQL or AL will be established in the permit.

<sup>3</sup> Nitrate will be used only for calculation of cation/anion balance because of regional nitrate pollution and none used in processes.

<sup>4</sup> NE = Not Established

<sup>5</sup> If the gross alpha particle activity is greater than the AL or AQL, then calculate the adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

<sup>6</sup> Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.



TABLE 14  
ANNUAL GROUNDWATER MONITORING  
FLORENCE COPPER INC.  
FLORENCE, ARIZONA

Parameter <sup>1</sup>	P19-1-O		P49-O		M52-UBF		M54-LBF		M54-O		M33-UBF (replacement)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as nitrogen <sup>3</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cation/anion balance	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	NE	0.71	NE	0.71	NE	0.16	NE	0.16	NE	0.16	Reserved	Reserved
Antimony	0.006	0.005	0.006	0.005	0.006	0.0048	0.006	0.0048	0.006	0.0048	Reserved	Reserved
Arsenic	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	0.05	0.026	Reserved	Reserved
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6	Reserved	Reserved
Beryllium	0.0053	NE	0.0053	NE	0.004	0.0032	0.004	0.0032	0.004	0.0032	Reserved	Reserved
Cadmium	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	Reserved	Reserved
Chromium (total)	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08	Reserved	Reserved
Cobalt	NE	0.005	NE	0.005	NE	0.002	NE	0.002	NE	0.002	Reserved	Reserved
Copper	NE	0.8	NE	0.8	NE	0.8	NE	0.8	NE	0.8	Reserved	Reserved
Iron	NE	2.2	NE	2.2	NE	1.4	NE	1.4	NE	1.4	Reserved	Reserved
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	Reserved	Reserved
Manganese	NE	0.22	NE	0.22	NE	0.52	NE	0.52	NE	0.22	Reserved	Reserved
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	Reserved	Reserved
Nickel	0.13	NE	0.1	0.08	0.1	0.08	0.1	0.08	0.1	0.08	Reserved	Reserved
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	Reserved	Reserved
Thallium	0.024	NE	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016	Reserved	Reserved
Zinc	NE	4	NE	4	NE	4	NE	4	NE	4	Reserved	Reserved
Gross Alpha	NE	15	NE	15	NE	15	NE	15	NE	15	Reserved	Reserved
Adjusted Gross Alpha (pCi/L) <sup>5</sup>	15	12	15	12	15	12	26.5	NE	26.5	NE	Reserved	Reserved
Radium 226 + 228 (pCi/L)	5	4	5	4	17.2	NE	17.2	NE	17.2	NE	Reserved	Reserved
Total Uranium Isotopes (pCi/L) <sup>6</sup>	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total petroleum hydrocarbons- diesel	Monitor	Monitor	Monitor	Monitor	Monitor	NE	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Ethylbenzene	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56	0.7	0.56
Toluene	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8
Total Xylene	10	8	10	8	10	8	10	8	10	8	10	8

Notes:

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no AQL or AL will be established in the permit.

<sup>3</sup> Nitrate will be used only for calculation of cation/anion balance because of regional nitrate pollution and none used in processes.

<sup>4</sup> NE = Not Established

<sup>5</sup> If the gross alpha particle activity is greater than the AL or AQL, then calculate the adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

<sup>6</sup> Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

**Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells**

Parameter <sup>1</sup>	M66-UBF (USDW Monitoring Well)		M67-LBF (USDW Monitoring Well)		M68-LBF (USDW Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD	TBD	TBD	TBD	TBD
Bicarbonate	TBD	TBD	TBD	TBD	TBD	TBD
Calcium	TBD	TBD	TBD	TBD	TBD	TBD
Carbonate	TBD	TBD	TBD	TBD	TBD	TBD
Chloride	TBD	TBD	TBD	TBD	TBD	TBD
Nitrate as nitrogen <sup>3</sup>	TBD	TBD	TBD	TBD	TBD	TBD
Potassium	TBD	TBD	TBD	TBD	TBD	TBD
Sodium	TBD	TBD	TBD	TBD	TBD	TBD
Cation/anion balance	TBD	TBD	TBD	TBD	TBD	TBD
Aluminum	TBD	TBD	TBD	TBD	TBD	TBD
Antimony	TBD	TBD	TBD	TBD	TBD	TBD
Arsenic	TBD	TBD	TBD	TBD	TBD	TBD
Barium	TBD	TBD	TBD	TBD	TBD	TBD
Beryllium	TBD	TBD	TBD	TBD	TBD	TBD
Cadmium	TBD	TBD	TBD	TBD	TBD	TBD
Chromium (total)	TBD	TBD	TBD	TBD	TBD	TBD
Cobalt	TBD	TBD	TBD	TBD	TBD	TBD
Copper	TBD	TBD	TBD	TBD	TBD	TBD
Iron	TBD	TBD	TBD	TBD	TBD	TBD
Lead	TBD	TBD	TBD	TBD	TBD	TBD
Manganese	TBD	TBD	TBD	TBD	TBD	TBD
Mercury	TBD	TBD	TBD	TBD	TBD	TBD
Nickel	TBD	TBD	TBD	TBD	TBD	TBD
Selenium	TBD	TBD	TBD	TBD	TBD	TBD
Thallium	TBD	TBD	TBD	TBD	TBD	TBD
Zinc	TBD	TBD	TBD	TBD	TBD	TBD
Gross Alpha	TBD	TBD	TBD	TBD	TBD	TBD
Adjusted Gross Alpha (pCi/L) <sup>5</sup>	TBD	TBD	TBD	TBD	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium Isotopes (pCi/L) <sup>6</sup>	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium	TBD	TBD	TBD	TBD	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD	TBD	TBD	TBD	TBD
Benzene	TBD	TBD	TBD	TBD	TBD	TBD
Ethylbenzene	TBD	TBD	TBD	TBD	TBD	TBD
Toluene	TBD	TBD	TBD	TBD	TBD	TBD
Total Xylene	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

<sup>1</sup> Metals must be analyzed as dissolved metals.

<sup>2</sup> Monitor = Monitoring required, but no AQL or AL will be established in the permit.

<sup>3</sup> Nitrate will be used only for calculation of cation/anion balance because of regional nitrate pollution and none used in processes.

<sup>4</sup> NE = Not Established

<sup>5</sup> If the gross alpha particle activity is greater than the AL or AQL, then calculate the adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

<sup>6</sup> Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

AL = alert level

AQL = Aquifer Quality Limit

mg/L = milligrams per liter

pCi/L = picocuries per liter

TBD = To Be Determined

USDW = Underground Source of Drinking Water

**Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells**

Parameter	M69-UBF (USDW Monitoring Well)		M70-LBF (USDW Monitoring Well)		M71-UBF (USDW Monitoring Well)	
	AQL (mg/l)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD	TBD	TBD	TBD	TBD
Bicarbonate	TBD	TBD	TBD	TBD	TBD	TBD
Calcium	TBD	TBD	TBD	TBD	TBD	TBD
Carbonate	TBD	TBD	TBD	TBD	TBD	TBD
Chloride	TBD	TBD	TBD	TBD	TBD	TBD
Nitrate as nitrogen	TBD	TBD	TBD	TBD	TBD	TBD
Potassium	TBD	TBD	TBD	TBD	TBD	TBD
Sodium	TBD	TBD	TBD	TBD	TBD	TBD
Cation/anion balance	TBD	TBD	TBD	TBD	TBD	TBD
Aluminum	TBD	TBD	TBD	TBD	TBD	TBD
Antimony	TBD	TBD	TBD	TBD	TBD	TBD
Arsenic	TBD	TBD	TBD	TBD	TBD	TBD
Barium	TBD	TBD	TBD	TBD	TBD	TBD
Beryllium	TBD	TBD	TBD	TBD	TBD	TBD
Cadmium	TBD	TBD	TBD	TBD	TBD	TBD
Chromium (total)	TBD	TBD	TBD	TBD	TBD	TBD
Cobalt	TBD	TBD	TBD	TBD	TBD	TBD
Copper	TBD	TBD	TBD	TBD	TBD	TBD
Iron	TBD	TBD	TBD	TBD	TBD	TBD
Lead	TBD	TBD	TBD	TBD	TBD	TBD
Manganese	TBD	TBD	TBD	TBD	TBD	TBD
Mercury	TBD	TBD	TBD	TBD	TBD	TBD
Nickel	TBD	TBD	TBD	TBD	TBD	TBD
Selenium	TBD	TBD	TBD	TBD	TBD	TBD
Thallium	TBD	TBD	TBD	TBD	TBD	TBD
Zinc	TBD	TBD	TBD	TBD	TBD	TBD
Gross Alpha	TBD	TBD	TBD	TBD	TBD	TBD
Adjusted Gross Alpha (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium Isotopes (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium	TBD	TBD	TBD	TBD	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD	TBD	TBD	TBD	TBD
Benzene	TBD	TBD	TBD	TBD	TBD	TBD
Ethylbenzene	TBD	TBD	TBD	TBD	TBD	TBD
Toluene	TBD	TBD	TBD	TBD	TBD	TBD
Total Xylene	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

*AL = alert level*

*AQL = Aquifer Quality Limit*

*mg/L = milligrams per liter*

*pCi/L = picocuries per liter*

*TBD = To Be Determined*

*USDW = Underground Source of Drinking Water*

**Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells**

Parameter	M72-UBF (ACD Demonstration Well)		M73-LBF (ACD Demonstration Well)		M62-LBF (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD	TBD	TBD	TBD	TBD
Bicarbonate	TBD	TBD	TBD	TBD	TBD	TBD
Calcium	TBD	TBD	TBD	TBD	TBD	TBD
Carbonate	TBD	TBD	TBD	TBD	TBD	TBD
Chloride	TBD	TBD	TBD	TBD	TBD	TBD
Nitrate as nitrogen	TBD	TBD	TBD	TBD	TBD	TBD
Potassium	TBD	TBD	TBD	TBD	TBD	TBD
Sodium	TBD	TBD	TBD	TBD	TBD	TBD
Cation/anion balance	TBD	TBD	TBD	TBD	TBD	TBD
Aluminum	TBD	TBD	TBD	TBD	TBD	TBD
Antimony	TBD	TBD	TBD	TBD	TBD	TBD
Arsenic	TBD	TBD	TBD	TBD	TBD	TBD
Barium	TBD	TBD	TBD	TBD	TBD	TBD
Beryllium	TBD	TBD	TBD	TBD	TBD	TBD
Cadmium	TBD	TBD	TBD	TBD	TBD	TBD
Chromium (total)	TBD	TBD	TBD	TBD	TBD	TBD
Cobalt	TBD	TBD	TBD	TBD	TBD	TBD
Copper	TBD	TBD	TBD	TBD	TBD	TBD
Iron	TBD	TBD	TBD	TBD	TBD	TBD
Lead	TBD	TBD	TBD	TBD	TBD	TBD
Manganese	TBD	TBD	TBD	TBD	TBD	TBD
Mercury	TBD	TBD	TBD	TBD	TBD	TBD
Nickel	TBD	TBD	TBD	TBD	TBD	TBD
Selenium	TBD	TBD	TBD	TBD	TBD	TBD
Thallium	TBD	TBD	TBD	TBD	TBD	TBD
Zinc	TBD	TBD	TBD	TBD	TBD	TBD
Gross Alpha	TBD	TBD	TBD	TBD	TBD	TBD
Adjusted Gross Alpha (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium Isotopes (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium	TBD	TBD	TBD	TBD	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD	TBD	TBD	TBD	TBD
Benzene	TBD	TBD	TBD	TBD	TBD	TBD
Ethylbenzene	TBD	TBD	TBD	TBD	TBD	TBD
Toluene	TBD	TBD	TBD	TBD	TBD	TBD
Total Xylene	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

ACD = annular conductivity device

AL = alert level

AQL = Aquifer Quality Limit

mg/L = milligrams per liter

pCi/L = picocuries per liter

TBD = To Be Determined

**Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells**

Parameter	M63-LBF (Fault Monitoring Well)		M64-LBF (Fault Monitoring Well)		M65-LBF (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD	TBD	TBD	TBD	TBD
Bicarbonate	TBD	TBD	TBD	TBD	TBD	TBD
Calcium	TBD	TBD	TBD	TBD	TBD	TBD
Carbonate	TBD	TBD	TBD	TBD	TBD	TBD
Chloride	TBD	TBD	TBD	TBD	TBD	TBD
Nitrate as nitrogen	TBD	TBD	TBD	TBD	TBD	TBD
Potassium	TBD	TBD	TBD	TBD	TBD	TBD
Sodium	TBD	TBD	TBD	TBD	TBD	TBD
Cation/anion balance	TBD	TBD	TBD	TBD	TBD	TBD
Aluminum	TBD	TBD	TBD	TBD	TBD	TBD
Antimony	TBD	TBD	TBD	TBD	TBD	TBD
Arsenic	TBD	TBD	TBD	TBD	TBD	TBD
Barium	TBD	TBD	TBD	TBD	TBD	TBD
Beryllium	TBD	TBD	TBD	TBD	TBD	TBD
Cadmium	TBD	TBD	TBD	TBD	TBD	TBD
Chromium (total)	TBD	TBD	TBD	TBD	TBD	TBD
Cobalt	TBD	TBD	TBD	TBD	TBD	TBD
Copper	TBD	TBD	TBD	TBD	TBD	TBD
Iron	TBD	TBD	TBD	TBD	TBD	TBD
Lead	TBD	TBD	TBD	TBD	TBD	TBD
Manganese	TBD	TBD	TBD	TBD	TBD	TBD
Mercury	TBD	TBD	TBD	TBD	TBD	TBD
Nickel	TBD	TBD	TBD	TBD	TBD	TBD
Selenium	TBD	TBD	TBD	TBD	TBD	TBD
Thallium	TBD	TBD	TBD	TBD	TBD	TBD
Zinc	TBD	TBD	TBD	TBD	TBD	TBD
Gross Alpha	TBD	TBD	TBD	TBD	TBD	TBD
Adjusted Gross Alpha (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium Isotopes (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium	TBD	TBD	TBD	TBD	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD	TBD	TBD	TBD	TBD
Benzene	TBD	TBD	TBD	TBD	TBD	TBD
Ethylbenzene	TBD	TBD	TBD	TBD	TBD	TBD
Toluene	TBD	TBD	TBD	TBD	TBD	TBD
Total Xylene	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

*AL = alert level*

*AQL = Aquifer Quality Limit*

*mg/L = milligrams per liter*

*pCi/L = picocuries per liter*

*TBD = To Be Determined*

**Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells**

Parameter	M75-UBF (Fault Monitoring Well)		M74-O (Fault Monitoring Well)		M77-UBF (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD	TBD	TBD	TBD	TBD
Bicarbonate	TBD	TBD	TBD	TBD	TBD	TBD
Calcium	TBD	TBD	TBD	TBD	TBD	TBD
Carbonate	TBD	TBD	TBD	TBD	TBD	TBD
Chloride	TBD	TBD	TBD	TBD	TBD	TBD
Nitrate as nitrogen	TBD	TBD	TBD	TBD	TBD	TBD
Potassium	TBD	TBD	TBD	TBD	TBD	TBD
Sodium	TBD	TBD	TBD	TBD	TBD	TBD
Cation/anion balance	TBD	TBD	TBD	TBD	TBD	TBD
Aluminum	TBD	TBD	TBD	TBD	TBD	TBD
Antimony	TBD	TBD	TBD	TBD	TBD	TBD
Arsenic	TBD	TBD	TBD	TBD	TBD	TBD
Barium	TBD	TBD	TBD	TBD	TBD	TBD
Beryllium	TBD	TBD	TBD	TBD	TBD	TBD
Cadmium	TBD	TBD	TBD	TBD	TBD	TBD
Chromium (total)	TBD	TBD	TBD	TBD	TBD	TBD
Cobalt	TBD	TBD	TBD	TBD	TBD	TBD
Copper	TBD	TBD	TBD	TBD	TBD	TBD
Iron	TBD	TBD	TBD	TBD	TBD	TBD
Lead	TBD	TBD	TBD	TBD	TBD	TBD
Manganese	TBD	TBD	TBD	TBD	TBD	TBD
Mercury	TBD	TBD	TBD	TBD	TBD	TBD
Nickel	TBD	TBD	TBD	TBD	TBD	TBD
Selenium	TBD	TBD	TBD	TBD	TBD	TBD
Thallium	TBD	TBD	TBD	TBD	TBD	TBD
Zinc	TBD	TBD	TBD	TBD	TBD	TBD
Gross Alpha	TBD	TBD	TBD	TBD	TBD	TBD
Adjusted Gross Alpha (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium Isotopes (pCi/L)	TBD	TBD	TBD	TBD	TBD	TBD
Total Uranium	TBD	TBD	TBD	TBD	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD	TBD	TBD	TBD	TBD
Benzene	TBD	TBD	TBD	TBD	TBD	TBD
Ethylbenzene	TBD	TBD	TBD	TBD	TBD	TBD
Toluene	TBD	TBD	TBD	TBD	TBD	TBD
Total Xylene	TBD	TBD	TBD	TBD	TBD	TBD

**Notes:**

*AL = alert level*

*AQL = Aquifer Quality Limit*

*mg/L = milligrams per liter*

*pCi/L = picocuries per liter*

*TBD = To Be Determined*

Table 14.1. Annual Groundwater Compliance Monitoring at Supplemental Monitoring Wells		
Parameter	M76-O (Fault Monitoring Well)	
	AQL (mg/L)	AL (mg/L)
pH (lab)	TBD	TBD
Bicarbonate	TBD	TBD
Calcium	TBD	TBD
Carbonate	TBD	TBD
Chloride	TBD	TBD
Nitrate as nitrogen	TBD	TBD
Potassium	TBD	TBD
Sodium	TBD	TBD
Cation/anion balance	TBD	TBD
Aluminum	TBD	TBD
Antimony	TBD	TBD
Arsenic	TBD	TBD
Barium	TBD	TBD
Beryllium	TBD	TBD
Cadmium	TBD	TBD
Chromium (total)	TBD	TBD
Cobalt	TBD	TBD
Copper	TBD	TBD
Iron	TBD	TBD
Lead	TBD	TBD
Manganese	TBD	TBD
Mercury	TBD	TBD
Nickel	TBD	TBD
Selenium	TBD	TBD
Thallium	TBD	TBD
Zinc	TBD	TBD
Gross Alpha	TBD	TBD
Adjusted Gross Alpha (pCi/L)	TBD	TBD
Radium 226 + 228 (pCi/L)	TBD	TBD
Total Uranium Isotopes (pCi/L)	TBD	TBD
Total Uranium	TBD	TBD
Total petroleum hydrocarbons- diesel	TBD	TBD
Benzene	TBD	TBD
Ethylbenzene	TBD	TBD
Toluene	TBD	TBD
Total Xylene	TBD	TBD

**Notes:**

*AL = alert level*

*AQL = Aquifer Quality Limit*
















*mg/L = milligrams per liter*

*pCi/L = picocuries per liter*

*TBD = To Be Determined*

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LEGEND

- |   |                                    |   |                              |   |                                   |
|---|------------------------------------|---|------------------------------|---|-----------------------------------|
|  | PTF CLASS III WELL                 |  | FAULT MONITORING WELL        |  | PROPOSED AOR / FORMER BHP AOR     |
|  | PROPOSED INJECTION / RECOVERY WELL |  | POINT OF COMPLIANCE WELL     |  | AQUIFER EXEMPTION BOUNDARY        |
|  | PROPOSED OBSERVATION WELL          |  | FAULT                        |  | ISCR WELL FIELD                   |
|  | PROPOSED PERIMETER WELL            |  | RESOURCE BLOCK               |  | FLORENCE COPPER PROPERTY BOUNDARY |
|  | USDW MONITORING WELL               |  | FUTURE WELL CLUSTER LOCATION |   |                                   |
|  | ACD DEMONSTRATION WELL             |   |                              |   |                                   |

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2. TOPOGRAPHIC CONTOUR SOURCE: FLORENCE COPPER, OCTOBER 2010
3. FUTURE WELL CLUSTER LOCATIONS TO BE INSTALLED BEFORE YEAR NINE OF OPERATIONS AND INCLUDE ONE UBF, ONE LBF, AND ONE OXIDE MONITORING WELL.

HALEY  
ALDRICH

FLORENCE COPPER, INC.  
FLORENCE, ARIZONA

PROPOSED FAULT AND USDW  
MONITORING WELL LOCATIONS

MARCH 2021

FIGURE A-17

